Supplemental Material

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##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

## here() starts at /Users/miacarmichael/Desktop/epid8060fall2019/MiaCarmichael-Project

## Loading required package: carData

##   
## Attaching package: 'car'

## The following object is masked from 'package:dplyr':  
##   
## recode

## Bivariate Analysis

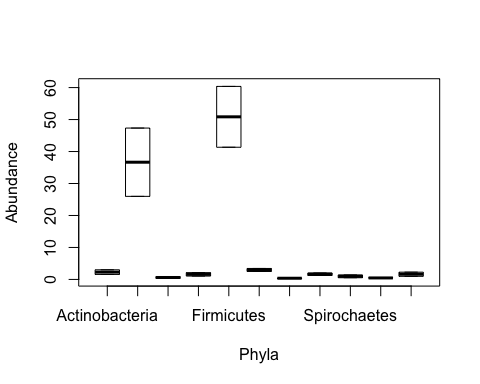
Bacterial abundance verses time period. ANOVA allows us to see that there is variance between the bacterial abundance at beginning and end of the feedlot period in High-RFI steers (Table 5, Table 6). This indicates that the microbiome did experieience changes over the course of the feedlot period.

Looking at the correlation, we can see that there is a high positive correlation between the change from the beginning of the feedlot period to the end of the feeddlot period for phyla, and therefore the correlation between them will be closer to 1.

# Looking at ANOVA

## Df Sum Sq Mean Sq F value Pr(>F)   
## Phyla 10 6089 608.9 16.22 3.43e-05 \*\*\*  
## Residuals 11 413 37.5   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

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# Looking at a correlation between data points at the beginning and end of feedlot period

## # A tibble: 1 x 1  
## x  
## <dbl>  
## 1 0.874

## # A tibble: 1 x 1  
## x  
## <dbl>  
## 1 0.888

# Looking at Linear Model

##   
## Call:  
## lm(formula = Beginning ~ End, data = phylatest)  
##   
## Coefficients:  
## (Intercept) End   
## 1.5911 0.8251

##   
## Call:  
## lm(formula = Beginning ~ End, data = phylatest)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -10.060 -2.150 -1.931 -1.046 24.314   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 1.5911 3.0335 0.525 0.612600   
## End 0.8251 0.1526 5.408 0.000429 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 8.948 on 9 degrees of freedom  
## Multiple R-squared: 0.7647, Adjusted R-squared: 0.7385   
## F-statistic: 29.25 on 1 and 9 DF, p-value: 0.0004286

## Anova Table (Type III tests)  
##   
## Response: Beginning  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 22.03 1 0.2751 0.6125999   
## End 2341.63 1 29.2452 0.0004286 \*\*\*  
## Residuals 720.62 9   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

##   
## Call:  
## lm(formula = Beginning ~ End, data = phylatest)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -10.060 -2.150 -1.931 -1.046 24.314   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 1.5911 3.0335 0.525 0.612600   
## End 0.8251 0.1526 5.408 0.000429 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 8.948 on 9 degrees of freedom  
## Multiple R-squared: 0.7647, Adjusted R-squared: 0.7385   
## F-statistic: 29.25 on 1 and 9 DF, p-value: 0.0004286

## # A tibble: 2 x 5  
## term estimate std.error statistic p.value  
## <chr> <dbl> <dbl> <dbl> <dbl>  
## 1 (Intercept) 1.59 3.03 0.525 0.613   
## 2 End 0.825 0.153 5.41 0.000429

##   
## Call:  
## lm(formula = Beginning ~ End, data = phylatest2)  
##   
## Coefficients:  
## (Intercept) End   
## 1.653 0.818

##   
## Call:  
## lm(formula = Beginning ~ End, data = phylatest2)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -11.807 -1.766 -1.533 -1.258 20.050   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 1.6529 2.7449 0.602 0.561918   
## End 0.8180 0.1412 5.792 0.000262 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 8.046 on 9 degrees of freedom  
## Multiple R-squared: 0.7885, Adjusted R-squared: 0.7649   
## F-statistic: 33.54 on 1 and 9 DF, p-value: 0.0002622

## Anova Table (Type III tests)  
##   
## Response: Beginning  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 23.48 1 0.3626 0.5619183   
## End 2171.62 1 33.5434 0.0002622 \*\*\*  
## Residuals 582.67 9   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

##   
## Call:  
## lm(formula = Beginning ~ End, data = phylatest2)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -11.807 -1.766 -1.533 -1.258 20.050   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 1.6529 2.7449 0.602 0.561918   
## End 0.8180 0.1412 5.792 0.000262 \*\*\*  
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## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
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## Residual standard error: 8.046 on 9 degrees of freedom  
## Multiple R-squared: 0.7885, Adjusted R-squared: 0.7649   
## F-statistic: 33.54 on 1 and 9 DF, p-value: 0.0002622

## # A tibble: 2 x 5  
## term estimate std.error statistic p.value  
## <chr> <dbl> <dbl> <dbl> <dbl>  
## 1 (Intercept) 1.65 2.74 0.602 0.562   
## 2 End 0.818 0.141 5.79 0.000262